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RESEARCH NOTE
Release of Hairless Kiwifruit 'Eldorado' and 'Nugget', and 'Early Bird' Pollinizer for Further Evaluation

Kay Ryugo[1] and Ed Stover[2]

The Department of Plant and Environmental Sciences, UC-Davis, is releasing two relatively hairless kiwifruit (*Actinidia chinensis* Planch.) cultivars, 'Eldorado' and 'Nugget', and an early blooming male pollinizer, 'Early Bird'. The seedlings originated from a mixture of seeds collected from a test plot of *A. chinensis* and *A. deliciosa* [(A. Chev.) C. F. Liang et A. R. Ferguson], sent to the senior author in 1983 by Mr. Ma Jie, Vice Director of the Scientific and Technological Commission of Shijiazhuang Prefecture, Hebei Province, China. The seeds were germinated in the laboratory, and in 1990, 120 seedlings were transplanted to an isolated block in the departmental orchard in Davis, Calif. Among the seedlings, five produced fruits lacking the tough bristle-like trichomes which are typical of *A. deliciosa* (3).

Selection 5-4, which has the largest fruit, is being released as 'Eldorado', whereas Selection 5-12 is being called 'Nugget' because of its smaller size (Fig. 1). The 'Eldorado' bears one to two fruits on the basal nodes, similar to 'Hayward'; 'Nugget' bears clusters of cordate fruits on basal nodes. Both cultivars mature in late summer, beginning about September 10 in Davis, Calif. Their flesh turns from bright green to cream-yellow upon ripening with typical kiwifruit flavor and sugar content (13.5-15.0 ºBrix). In October 2007, the average fruit weights of typical 'Eldorado' and 'Nugget' were 106 and 60 g, respectively. All evaluations were made on non-thinned vines. The sugar content and size of 'Eldorado' are, therefore, comparable

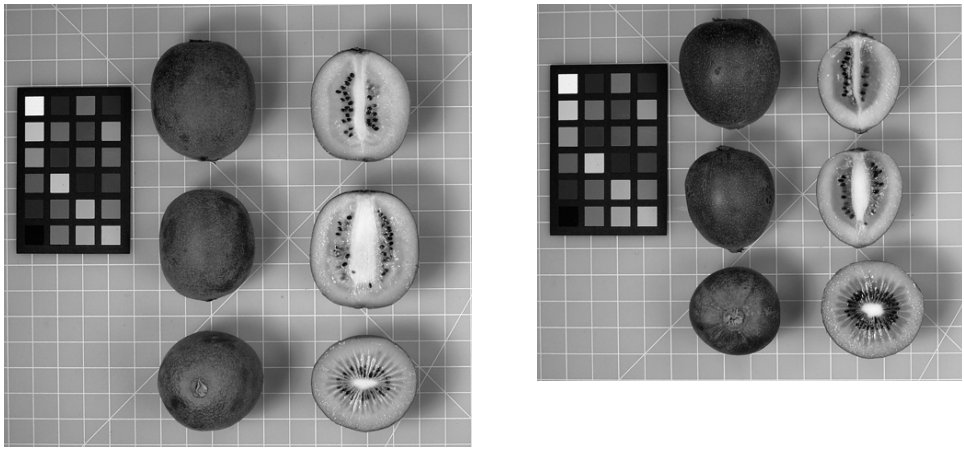

Figure 1. 'Eldorado' (left) and 'Nugget' (right) kiwifruit. Background squares are 1.27 cm x 1.27 cm. Color standard is GretagMacbeth Color Checker Mini (X-Rite, Grand Rapids, Mich.).

[1] Professor Emeritus, Department of Plant and Environmental Sciences, University of California, Davis, CA
[2] Curator and Research Leader, USDA/ARS, National Clonal Germplasm Repository, Davis, CA

to those reported for the *A. chinensis* cultivar Zespri Gold™ (4), whose hairless fruits are widely marketed in the U.S.A. The two new cultivars exhibit a tapered shape with a slight beak, characteristic of *A. chinensis* (2). When analyzed by flow cytometry they were both diploid, as expected for *A. chinensis*, in contrast to *A. deliciosa* cultivars that are hexaploid (1).

When harvested, both 'Eldorado' and 'Nugget' have short felt-like trichomes that wind along the fruit surface, described as simple uniseriate hairs by Hallett and Sutherland (3). These soft trichomes are less rigid and less firmly attached to the fruit than the bristly ones typical of 'Hayward' and other *A. deliciosa* cultivars. The pubescence can be easily removed manually or mechanically by brushes on a commercial packing line, reducing the potential for respiratory and eye irritations during sorting and packing. The epidermis on 'Eldorado' and 'Nugget' is thick and well suberized, typical of *A. chinensis* and *A. deliciosa*, and unlike the glabrous delicate skins of *A. arguta* [(Siebold et Zucc.) Planch. ex Miq.] or *A. kolomikta* [(Maxim. et Rupr.) Maxim].

Fruits of both cultivars are very susceptible to leaf scarring and sunburn. Seemingly the bristles on *A. deliciosa* protect the fruits from scarring by leaves and branches. In Davis, these two cultivars exhibit no fruit doubles or fans, in marked contrast to 'Hayward'. The two cultivars can be propagated by soft- or hard-wood cuttings by treatment of their bases with Hormex #3 (indolebutyric acid, Brooker Chemical, Chatsworth, Calif.) and also by grafting onto kiwifruit seedling rootstocks. Cuttings and grafted scions of 'Eldorado' grow very slowly the first season, but thereafter become quite vigorous, similar to other commercial kiwifruit cultivars. Because 'Eldorado' and 'Nugget' tend to bloom about 7-10 days earlier than the commercial *A. deliciosa* male pollinizers, they should be planted adjacent to an early blooming male vine, e.g 'Early Bird' (tested as Selection 5-23), which blooms concurrently with the two new releases. Cropping has been quite heavy on 'Eldorado' and 'Nugget', but replicated field tests, postharvest evaluations, and consumer acceptance trials are needed to establish their commercial potential. Judging from autumnal leaf fall, 'Eldorado' and 'Nugget' enter dormancy a few weeks earlier than 'Hayward' and other standard *A. deliciosa* cultivars.

'Eldorado' and 'Nugget' will not be patented; their scions are available through the National Clonal Germplasm Repository, c/o of the University of California, One Shields Avenue, Davis, CA. 95616. To our knowledge, they represent the first publicly available, freely distributed *A. chinensis* cultivars in the western hemisphere and further research is needed to determine their market potential.

Literature Cited

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